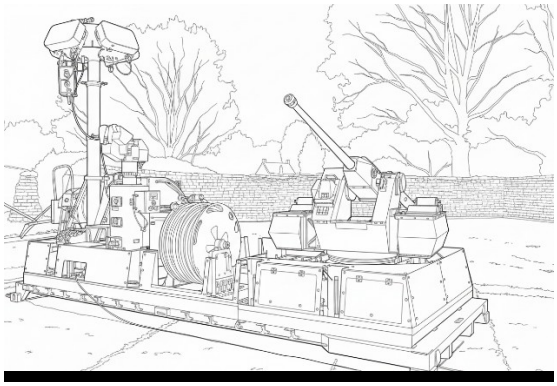
MSI Defence Systems — Terrahawk Paladin



IDENTITY & DESIGNATION

Official Designation: Terrahawk Paladin (Very Short-Range Air Defence — VSHORAD)

Manufacturer: MSI Defence Systems Ltd (Oldham, Greater Manchester, United Kingdom)

Weapon System: Terrahawk LW combat module — modified ground adaptation of Seahawk LW A2 naval turret

Country of Origin: United Kingdom

Year Introduced: First prototype revealed September 2022; upgraded variant September 2023; operational Ukraine November 2025

Primary Armament: 30 mm Mk44 Bushmaster II chain gun (Northrop Grumman)

NATO/Allied Designation: VSHORAD / C-UAS gun system — no formal NATO type designation

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CLASSIFICATION

Domain: Land (truck-mounted, palletised)

Category: Counter-UAS / Short-Range Air Defence

Sub-Category: Autonomous gun-based C-UAS with radar-guided fire control

Mission: Detection, tracking, and kinetic defeat of low-altitude aerial threats — drones, loitering munitions, helicopters

Deployment Mode: Mobile (MAN HX 8×8 chassis) or static (flatrack/pallet drop-off)

PHYSICAL SPECIFICATIONS

Mount: Terrahawk LW — fully rotating, universal cradle accommodating multiple weapon types

Primary Gun: 30×173 mm Mk44 Bushmaster II — selectable rate of fire: 100 or 200 rounds per minute

Muzzle Velocity: Exceeding 1,000 m/s

Ready Ammunition: 200–240 rounds, dual-feed system — rapid switching between ammunition types without manual reload

Chassis: MAN HX 8×8 tactical truck (NATO-standard flatrack carrier) — can be deployed off-vehicle

Crew: 2 operators (remote controllers) — one tracks, one engages

Weight: [VERIFY] — approximate combat weight not publicly disclosed

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PROPULSION & PERFORMANCE

Mobility: Wheeled, road-mobile on MAN HX 8×8; palletised module deployable to static positions

Setup Time: Rapid — module can be unloaded and operational without major reconfiguration

Engagement Range (Air): ~2 km with programmable airburst ammunition against drone-sized targets; 2.5–3 km against larger/less manoeuvrable targets

Engagement Range (Surface): Effective against ground and maritime targets at short range

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SENSORS, FIRE CONTROL & AUTONOMY

Radar: Four AESA (Active Electronically Scanned Array) antenna stations providing 360° simultaneous all-round surveillance

Radar Mast: Fixed mast with optional protective screens (installed on Ukraine units)

Fire Control: SATOS sighting system (MSI proprietary) — thermal sensor + laser rangefinder + automatic target following

EO/IR: Electro-optical targeting system + night-vision channel for low-visibility operations

Autonomy Level: Fully autonomous — integrated sensors detect, track, and engage without continuous operator input; operators retain authority to engage

Man-in-Loop: Yes — crew designates targets; system manages tracking and fire solution autonomously

Fuze Setter: Contactless programmable fuze setter for airburst ammunition

Integration: Can connect to broader air defence networks; APKWS semi-active laser-guided rocket pods optional

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AMMUNITION & WEAPONS OPTIONS

Standard Ammunition: 30×173 mm — programmable airburst (primary C-UAS), APDS/HE for surface targets

Alternate Weapon Calibres: 40 mm option available (Ukraine received 30 mm variant)

Optional Effectors: APKWS laser-guided rocket pods; system described as 'effector agnostic' to 40 mm and missile systems

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COUNTERMEASURE VULNERABILITY PROFILE

RF/EW Vulnerability: Low — no RF command link to jam; operates via internal sensor network and operator local control

GPS Vulnerability: Low — engagement solution based on radar/EO tracking, not GPS navigation

Physical Vulnerability: Elevated radar mast is exposed — Ukraine units fitted with protective screens

Terrain Limitation: Line-of-sight weapon; ineffective against targets masked by terrain or structures

Magazine Depth: 200–240 ready rounds limits sustained engagement against saturation attacks without resupply

Cost per Engagement: 30 mm cannon round: approximately $50–200 per round depending on type — strongly favourable vs. drone targets

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COST & PROCUREMENT

Programme Value: Part of £70 million (~$86M) UK military aid package to Ukraine, October 2023

Unit Cost: [VERIFY] — not publicly disclosed per unit; included within broader aid package

Cost Exchange: 30 mm airburst round (~$100–200) vs. Shahed-136 ($20,000–50,000) — ratio 100:1 to 500:1 in defender's favour

Delivery: First units confirmed operational with Ukraine's 156th Air Defense Missile Regiment, November 2025

OPERATIONAL HISTORY

First Deployment: Ukraine — 156th Anti-Aircraft Missile Regiment of the Ukrainian Air Force, Zolotonosha, Cherkasy Oblast, confirmed November 18, 2025

Operational Role: Very short-range air defence of critical infrastructure and high-value sites against low-altitude drone and loitering munition attacks

Combat Record: [VERIFY] — engagement outcomes not publicly reported at time of writing

Force Integration: Integrated into Ukrainian Air Force structure (not ground forces), underscoring infrastructure protection mission

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CRUISE MISSILE CONVERGENCE NOTES

The Terrahawk Paladin exists because cruise missile technology has converged with commercial drone economics. A system designed to defeat Shahed-class one-way attack drones is, functionally, a cruise missile countermeasure — the Shahed is operationally indistinguishable from a cheap cruise missile, and the Terrahawk is the kinetic answer at the right cost point.

The cost-exchange arithmetic is the decisive data point: a 30 mm programmable airburst round defeating a Shahed-136 represents a cost ratio of roughly 200:1 in the defender's favour. This is the first countermeasure category in the book where the economics have definitively flipped back toward the defender — and it did so through industrial-scale ammunition, not expensive guided interceptors.

> *ENGINEER'S NOTE: The Mk44 Bushmaster II is an American weapon on a British truck defeating Iranian-designed Russian-built cruise missiles over Ukraine. This is what allied interoperability looks like in the convergence era — not bespoke national programs but modular combinations of best-available components. MSI built the mount around what works. Northrop Grumman makes what works. The integration is the product.*

MANUFACTURING PHILOSOPHY

MSI Defence Systems evolved the Terrahawk directly from its naval Seahawk LW A2 turret programme — a land adaptation of a mature naval weapon station. The palletised, modular architecture reflects a deliberate logistics philosophy: the combat module does not require a dedicated vehicle. It can be dropped at any position with a flatrack and becomes an autonomous sentry. This approach dramatically reduces the infrastructure footprint required to field the capability.

The use of the commercially-sourced MAN HX chassis, NATO-standard flatrack mounting, and Northrop Grumman's production Mk44 cannon reflects supply chain confidence — each major component has an established logistics and maintenance chain that does not depend on bespoke MSI support.

SOURCES & CROSS-REFERENCES

Manufacturer: https://www.msidefencesystems.com

Army Recognition (Ukraine deployment): https://www.armyrecognition.com — November 21, 2025

Ukrainska Pravda (operational confirmation): https://www.pravda.com.ua/eng/news/2025/11/20/8008191/

Defence Express (capabilities analysis): https://en.defence-ua.com — Terrahawk Paladin capabilities brief

Aeronaut Media (technical analysis): https://aeronaut.media/articles-en/en-terrahawk-paladin/

Cross-Reference: See Volume 2: Rheinmetall Skynex (comparable gun-based C-UAS); Gepard SPAAG (related gun-based SHORAD); ODIN Win_Hit (directed energy C-UAS)

Volume 1 Cross-Reference: Chapter 21.1 (Conventional Kinetic Countermeasures); Chapter 4 (Convergence Thesis — cost exchange asymmetry)